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ABSTRACT

This study examines achievement test results for one rural Tennessee school district in the context of national and state educational trends. The data were intended to assist in a 5-year school-improvement program that takes rural revenue constraints into account. Rural restructuring has been hindered in part because of rural communities' limited ability to generate funds. Ongoing inequities have been the subject of conflict in all branches of state government in Tennessee. For this study, 954 elementary and middle-school students were tested with the Tennessee Comprehensive Assessment Program (TCAP), consisting of 8 achievement areas. ANOVA statistical procedures were used to determine the effects of grade levels, teachers, and schools on achievement scores. Results did not show significant differences among teachers and schools, but strongly suggested that higher grade levels had a positive effect on achievement. Mean scores for study skills were consistently lower than other skills. The study concludes that educational attainment can be achieved when students are expected to perform at their grade levels. It is also suggested that educators and parents seek ways to help students develop better study skills. The data do not support the concept of the middle school for transitional reasons. (TES)

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RESTRUCTURING RURAL SCHOOLS

WITH

SCHOOL-FUNDING INEQUITIES

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Have Public Schools Improved With Educational Reforms?

Much debate has taken place as to how public schools should be restructured to ensure a high level of quality education. Over the last eight years, a wave of legislative reforms have engulfed administrators, teachers, and students with standards that were purportedly enacted to improve the quality of education. However, despite the reform agenda to improve the quality of education, there is still some debate as to whether or not schooling has improved. There are still some disappointing results that show school intended reform remedies have not prevented school failure with low achieving and dropout students. To a large degree, this growing phenomenon of school failure has been observed in urban schools (Maeroff, 1988). What emanated from these urban observations is the need to address the needs of at-risk students.

The reforms of the 80s were rigid standards for curricular and instructional changes. While students were faced with more graduation requirements, teachers had to undergo more rigorous preparation and evaluation. A shared assumption among proponents of the reforms was governance and monitoring would effectuate quality education. However, opponents of such rigorous reforms argued that efforts to improve the quality of education had become bureaucratic and too centralized at the state level (Futrell, 1989; McNeil, 1988; Phipho, 1986; Rosenholtz, 1985). Therefore, a second attempt to reform education ushered in a decentralized reformed package that would enable local school districts to develop, implement, and monitor their schools at the local level. The concept of site-base management quickly became the focus of the second and third waves of reform.

Unlike earlier state reforms that regulated local school behaviors, proponents of site-base management argued that a collegian type of school governance would enable teachers, parents, and community to have input with decision-making

processes of education. A site-based management approach embraces the notion that the structure and function of schools revolve around collegian and collective participation of people at the local level. Thus far, the concept of restructuring schools for the 90s seems to be defined in terms of the local school environment. That is, local education and parents are now being called upon to participate in decision-making processes that will effectuate quality teaching and learning (Conley & Bacharach, 1990; David, 1991).

There is some indication that site-based management is working with some schools who have adopted the concept to redesign the operation of school procedures (Tamer, 1989). While the concept embraces a collegian structural function, its application in some school districts is not without warrant. In some school districts, the nontraditional collegian governance has not met the approval of administrators and teachers. While the decision-making powers are expected to be shared between principals and teachers, they have placed teachers in competitive positions for power. To some degree, principals have been reluctant to relinquish decision-making powers or to share them with teachers and parents (Conley & Bacharach, 1990; Darling-Hammond, 1986; Maeroff, 1988). Nevertheless, restructuring public school education for the 90s seems to be shifting to a site-based management approach that enables local schools to have control over quality education.

Can Rural Schools Be Restructured?

Since the inception of the educational reforms of the 80s, much of the reform movements addressed the needs of urban schools. The dismal educational outcomes of high dropout rates and low academic achievement scores in many urban schools led many educators to conclude that the quality of instruction had to be improved and stringent graduation requirements had to be adopted (Maeroff, 1988; Finn, 1990;

Taimer, 1989). According to Cuban (1989), the earlier reforms of the 80s had bypassed

urban schools. Therefore, urban schools could not be effective. Policy makers were urged to acutely examine the urban schools that were suffering greatly from the growing urban socioeconomical problems (Cuban, 1989; Maeroff, 1988). Therefore, proposed reform plans for urban schools encompassed providing special curriculum and instructional programs that would possibly eliminate low achievement and effectuate high graduate rates. By 1990, identifying potential at-risk students and providing alternate programs became the theme for urban students.

Despite the educational problems that urban schools face, there is growing evidence that the needs of another student population has been overlooked in our society. There is growing evidence that restructuring rural education has not had the attention that urban education has. One reason for this educational neglect is the ongoing problem with school-funding inequities. The revenue ability of urban communities to generate money has been greater than that of rural communities.

Purportedly, because rural schools have not had some reform opportunities as urban schools, quality education has not been adequately achieved. The lack of funding for quality education in rural schools has forced some rural school districts to pursue legal avenues to obtain the same level of education as urban schools. For example, in 1986, sixty-six rural public school districts in Kentucky filed a lawsuit to obtain equitable and adequate funding. Three years later (1989), the Kentucky Supreme Court found the state's public school system unconstitutional, and ordered every public school system in Kentucky to be restructured by April 15, 1990 (Foster, 1991). Educational outcomes for all students were viewed as a constitutional obligation of public schools. Therefore, the state was responsible for providing the educational programs that would effectuate academic attainment for low-income and

low-achieving students.

As a result of this landmark court ruling, Kentucky adopted the Education Reform Act of 1990 which overhauled the entire school system. Several significant changes resulted from this court ruling for reform. To meet the academic needs of all students, Kentucky had to revamp its school funding system to provide equitable and adequate funding to rural schools. Some results are in, and rural school seem to be the benefactors of innovative educational programs that were once inherited by urban/suburban schools.

Tennessee's Rural School Lawsuit

As with the rural school lawsuit filed in Kentucky, in 1989, 77 rural school systems in Tennessee charged the current funding system unconstitutional, because local tax revenues are unequal. The rural schools contend that they are unable to financially operate and compete with urban/suburban schools for excellent education. Therefore, the attorney, Lewis Danielson, for the rural school districts attempted to show how the current funding system prevents poor schools from meeting the minimum standards set by the state (Wissner, 1990).

On October 29, 1990, this landmark lawsuit went to trial in Chancery Court, and the public school system in Tennessee was found to be unconstitutional. However, this court ruling decision has not influenced the state legislature to expedite plans to meet the financial needs of rural schools. Budgetary problems at the state level have prevented Gov. McWherter's 21st Century Educational Plan from being adopted and funded. In June, 1991, the legislature opposed the Governor's proposal of a state income tax to fund his reformed plan. Thus, the court ruling with school funding only compounds the problem for legislators. There has been little done to correct the school-funding problem that rural schools face.

On September 12, 1991, the attorney for the rural school districts asked Judge C. Allen High for specific guidelines for the legislature to rectify inequities in funding for Tennessee public schools. However, on September 13, 1991, Chancellor High reaffirmed the funding system was unconstitutional. In a final decision, Judge High issued his final ruling that the legislature has until Summer, 1992 to reform public schools, but he lacked the power and expertise to instruct the General Assembly as to how the educational system can be reformed. The ruling was held by Attorney Charles Burson who warned that the court can still make demands on reform plans. This final ruling was rejected by the rural school attorney, William Barr, who contend that a reform bill was expected this fall. Many rural schools who have been drastically affected by state and local cuts claim they are further behind. No specific deadline was set by Judge High. Legislators are facing a dilemma with political decisions to find revenues to finance school reforms in a state that doesn't want a state income tax, while urban schools fear that money will be taken from them to help fund rural schools.

Rural Focus and Practical Application With Reforms

Achievement measures are frequently used to show academic status of students and accountability status of teachers and schools. In some instances, the results of competency testing has translated into competitive testing between teachers and schools. However, as the restructuring concept begins to gain momentum with the third wave of school reforms, rural schools will have more decision-making power about what is needed to improve their educational programs. Achievement scores serve as a precursor for deciding where changes are needed and how available resources can accommodate the changes. Rather than viewing low achievement scores as school failure indicators, the results will be interpreted on a greater improvement scale.

For a year, one rural county school district in Tennessee has been struggling

with how to improve the quality of education with the given revenue constraints. In an effort to restructure the school system, they have conferred with educators and consultants to help identify areas that need to be improved. The authors have begun a five-year improvement program with the rural school system. The restructuring process include collecting school and achievement data to serve as a precursor for deciding where changes are needed, as well as how available resources can facilitate the changes. Subsequently, the data will be used to help determine what the norm level of achievement should be in that school district. At-risk students will be identified early in the program. Another phase of the project will include meeting with administrators, teachers, and parents to train them with making curriculum and instructional decisions, motivating student learning, and retaining students.

Phase 1 of the Study:

The primary purpose of the Phase 1 of the study was to examine student achievement data in relation to the students, teachers, and schools. The secondary purpose was to identify how rural schools can utilize outcome data to improve the educational program.

Methodology

During the Spring Semester, 1990, 954 elementary and middle school students from a rural county school district in Tennessee were given an achievement test, the Tennessee Comprehensive Assessment Program (TCAP) . The test consisted of 8 achievement areas that were constructed for each grade level. The achievement test varied with grade levels. That is, the test for first graders measured reading, language, math, battery, word analysis, science, and social studies, whereas second and third graders were also tested for spelling. In addition to these achievement areas,the test for the other elementary students (grades 4-6) measured study skills rather than word

analysis skills. For the middle school students (grades 5-8), the test measured reading, language, battery, spelling, study skills, science, and social studies skills. The students represented two elementary schools and one middle school in the system (N = 3). One elementary school contained grades 1-4, while the other school contained grades 1-8. The other school in the study was a middle school with grades 5-8. The total number of teachers were 43 (N = 43).

Data Analyses

Descriptive statistics were employed to analyze the data for the mean and standard deviation scores for each grade, teacher, and school. Subsequently, achievement scores were analyzed to determine county-wide norms for the school district. Employing a series of statistical procedures, the data were then comparatively analyzed to determine significant achievement differences between grades, teachers, and schools. ANOVA statistical procedures were employed to determine the effects of these factors on achievement scores. The level of significance was set at .05.

Data Results

Although achievement areas did not yield significant differences with grades, teachers, and schools ($p > .05$), the descriptive results showed upper elementary students progressively had higher achievement mean scores. Therefore, county-wide achievement mean norms increased with upper elementary students (grades 2-4). Of the first graders, achievement mean scores with word analysis were higher (60.3) than with other mean scores that ranged from 54.3 to 57.9. ANOVA results strongly suggest that grade level has an effect on achievement scores. When grade level was taken into account, there were significant achievement differences ($F = 751.84$, $p < .000$). In fact, grade level was highly correlated with achievement scores. Coefficient values

ranged from .89 to .95. When the student achievement data were examined with each first grade teacher, the mean scores were similar for each teacher. As Table 1 shows, the mean scores ranged from 54.8 to 57.4. The significant difference found between the teachers' first grade classes was primarily due to two teachers' classes falling below the county-wide math norms ($F = 14.14$, $p < .000$).

Insert Table 1

Tables 1 and 2 also show the county-wide achievement norms increased with second, third, and fourth graders. Second grade students had higher achievement mean scores with language (66.1) and science (66.5) skills than with other skills. It can be seen that third graders' high mean scores were with language (69.3), math (68.0), basic (68.3) and science (68.8). As Table 2 presents, these scores did not deviate greatly from the county norms.

Insert Table 2

Of the achievement areas tested, second, third, and fourth graders scored lower

with spelling skills than upper grades (4-8). A further examination of student achievement scores with third and fourth grade teachers indicated that students with fourth grade teachers had higher mean scores. Similarly, students of sixth grade teachers had higher achievement mean scores than students of fifth grade teachers. Significant achievement mean differences only confirmed this descriptive finding between teachers' fifth and sixth grade classes ($p < .000$). Of course, it cannot be overlooked that both fifth and sixth grade scores were comparable to the county-wide achievement norms. In fact, as Tables 4 and 5 show, some teachers' classes exceeded some county-wide norm scores.

Insert Tables 4 & 5

It was also interesting to note how mean scores for study skills were lower than other achievement skills for fifth and sixth graders. The finding was also consistent with middle school students. Perhaps this finding suggest that students go through school not knowing or understanding how to study. Consequently, they rely on traditional study methods. It was obvious from the data findings that study skills are insignificant to the students.

Other findings from the study showed middle school students tend to be at the county-wide normative levels. As previously stated, in some cases, the students exceeded the norms, particularly in grade 8 with reading, language, spelling, and science skills. This finding strongly suggest that students' achievement readiness increases as they mature, and as they progressively move from one grade level to the

next. Although there were hardly any significant achievement differences found between 7th and 8th graders, the data did reveal significant differences between elementary and middle school students ($F = 143.39$, $p < .000$).

The data were also analyzed for comparative school differences with achievement. As it can be seen in Tables 1 and 5, some of the data show the first grade performance level in the two elementary schools were virtually the same. There was no significant difference found between the two schools ($T = -0.81$, $p = .44$). However, this finding was inconsistent with second and third graders attending two different elementary schools. Tables 6 and 7 show that that the differences occurred between grades and schools. For example, second graders at School G performed at an overall higher level (64.0) than second graders at School D (62.1). However, there was no significant achievement difference found between the two schools ($T = 1.95$, $p = .96$). On the other hand, the achievement mean score for third graders was higher (70.0) for School D than the third graders at School G (68.1). Significant achievement differences were found between the schools with third graders ($T = -2.29$, $p = .02$). Similar findings were also noticed between fifth, sixth, seventh, and eighth graders attending different schools. The students at different grade levels showed marginal performance differences at School D and School E. Significant achievement differences were found between the two schools with fifth graders ($T = 4.28$, $p = .001$), sixth graders ($T = 2.23$, $p = .02$), and seventh graders ($T = 2.23$, $p = .05$). Another interesting data finding was fifth through eighth graders at the school level of 1-8 performed just as well as the students at the middle school level (5-8). In fact, fifth, sixth, and seventh grade students at the 1-8 school level had higher achievement mean scores than students at the middle school.

Insert Tables 7 & 8

Conclusions

It is evident from the findings of the study that grade level is significantly related to achievement. The higher the grade, the greater the likelihood for higher achievement scores. This supports our hypothesis that each teacher has his/her own strength. This finding has strong implications for designing curriculum and instructional programs. It is also evident that when students are expected to perform at their grade level, educational attainments can be achieved. The authors affirm that teaching can be effective when instruction is derived from the strength of the teacher.

Some of the findings suggest that achievement scores could have been higher, if students were aware of various study methods. The lack of knowledge with study skills frequently infers that traditional teaching methods do not enable students to develop study skills. Therefore, students' learning styles are frequently congruent with teaching styles. The authors have concluded that administrators, teachers, and parents should seek ways to help students develop good study skills. Developing study skills should be included in curriculum and instructional programs.

It was also interesting to find that pre-adolescent students not in middle school settings performed as well as those students in middle school settings. Although much attention is being given to designing middle schools for transitional reasons, the achievement data does not support this concept. Moreover, some comparative findings between schools do not support some local decisions that have been made to close certain schools and/or programs.

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